



THOMAS G. NEWMAN,
EDITOR.

Vol. XXV. March 16, 1889. No. 11.

EDITORIAL BUZZINGS.

A little bit of patience,

Often makes the sunshine come,
And a little bit of love
Makes a very happy home;
A little bit of hope
Makes a rainy day look gay,
And a little bit of charity
Makes glad a weary day.

The Weather in England during February is described as "bolsterous," with high winds, fitful storms, rain, hail and snow. The honey season of 1888 was a very disastrous one in England, as well as in America. We are all hoping for a better season during the present year.

Lexington, Ky.—Last week we received an article for the BEE JOURNAL bearing the Lexington, Ky., postmark, but having no name of the writer. If the person who sent it will send us his name, the article will appear in print—otherwise it will have to go into the waste basket.

The Apiculturist for February is just received (our regular copy having been lost in the mail and this is re-sent to fill its place), and our thanks are due to brother Henry Alley for his very kind remarks, "endorsing" the "note" added to our biographical sketch by Brother Root in *Gleanings* for January. "Kind words can never die." It is a solid pleasure to notice the very friendly feeling now existing among apicultural editors. May it ever continue. Differ we must; to discuss many points of these differences is necessary, but when a kind feeling underlies the discussion, only good will result from it.

More Humbug.—C. M. Burgess, of Council Bluffs, Iowa, on Feb. 23, 1889, wrote us as follows:

MR. EDITOR:—The enclosed was clipped from the Council Bluffs weekly *Nonpareil* of Feb. 14, 1889. Do you think there is anything in it? I think all bee-keepers rely upon you to explain, and also to expose all frauds, and bring the offending parties to justice and repentance. The AMERICAN BEE JOURNAL is a very welcome visitor.

The clipping which Mr. Burgess sent originated with the Davenport, Iowa, *Democrat*, and reads as follows:

A NEW SWINDLE.—A new swindle is said to have been discovered at Oskaloosa, by a woman coming in a drug store and buying a half ounce of "attar of roses"—a butyraceous oil of delicious fragrance, which separates itself from the rose-water during the distillation of dried petals of roses.

A reporter heard this order, and his curiosity became strong as to why she should want so much of this expensive oil—retailing at from \$10 to \$15 an ounce. After much investigation he found that she used it in the manufacture of "pure" honey.

Syrup made of the proper consistency and color—an easy undertaking—with enough of this oil added to give it flavor, an article in all appearance, smell and taste, so closely representing honey as to fool the most expert; and thus at a cost not to exceed 3 or 4 cents per pound to the manufacturer, this bogus honey is sold in this market as straight, pure strained honey.

Bro. Burgess asks us, "Do you think there is anything in it?" No, there is nothing in it but *falsehood*! It is another of those sensational stories "gotten up for spice" by a reporter for the daily press.

In one particular it is like the Wiley *He*, written for the *pay* which the daily press gives for sensational stories, and if the writer is cornered, he will claim that he wrote it as a "pleasantry," never expecting that any one would be foolish enough to think there was a word of truth in it!

This time they want to bring our sisters into the mess, by saying that it was a woman who bought the "attar of roses" to fool the community with. No, sir; no woman did it. She knows more than that, and has more good, sound sense than to try to do anything of the kind! She knows that the addition of "attar of roses" to "syrup" would not "make honey" that will "fool" any one—much less an expert!

The idea of paying \$10 to \$15 an ounce for "attar of roses" to put into "syrup," and then say that the cost of the conglomeration is only "3 or 4 cents per pound!" Such a thing is ridiculous!

To say that "this bogus honey is sold in this market as straight, pure, strained honey," is an insult to common sense.

We call upon the Davenport *Democrat*, and all who have copied the item to retract it—and save themselves from being the laughing-stock of the age!

A Directory, containing the names and addresses of those interested in apiculture is being gotten up by Mr. Henry Alley, of Wenham, Mass. It will cost \$1.25. As soon as it is published we will give a further description of it.

Another Swindler.—A fellow by the name of Lincoln, whose address is given at "89 Aberdeen Street, Chicago" (but who cannot be found at that place), is offering recipes for "artificial honey," which he avers can be made for "8 cents per pound," and can readily be sold at "from 25 to 35 cents per pound," and is "equal to bees' honey," being often "mistaken by the best judges to be genuine!"

Accidentally we ran across one of the dupes of this man Lincoln, who had honey recipes for sale. We denounced him and his recipes as *frauds*; the fellow was scared and "lit out" as rapidly as possible.

Think of the idea of being able to sell "artificial honey" at from 25 to 35 cents per pound, when the real article of the most delicious kind can be bought from $\frac{1}{2}$ to $\frac{3}{4}$ of that price! The fellow, Lincoln, is more of a knave than a fool. He not only tries to swindle the buyers of the "artificial" humbug, but also swindles the agents who buy his recipes by holding up fabulous prices and sales as an inducement for them to engage in the nefarious business!

Echoes is the name of another home-made periodical of 30 pages, published by Will M. Young, of Nevada, O. Both the price and frequency of issue seem to be an enigma at present with the editor. He says:

We would like to issue monthly, but cannot say in this number how often—probably quarterly for 1889—and one issue per year may exhaust us completely, and disgust our friends.

The first issue shows considerable tact and some ability in the editor. The quality of the paper is good, but the printing is inferior. Five columns are devoted to bees and their management. The editor has 60 colonies, and had an average of 43 pounds of surplus to the colony, last season. We have read the first issue with considerable interest.

Mr. A. I. Root was so well pleased with his trip to California, that he is still giving very interesting accounts of it in *Gleanings*. More than that, he has planned another trip to the Pacific slope, and intends to stay longer, and see more of that wonderful country, and its wide-awake and jolly bee-keepers. He intends to take Mrs. Root with him next time. We almost envy him the pleasure. When we went to Europe ten years ago, he remained at home hard at work—now the tables are turned, and it is our turn to stay at home and work.

When Systematic and harmonious energies are put forth in defense of any pursuit, such efforts cannot fail to win. When the editors of the bee-periodicals all lay aside every trace of selfishness or party-spirit, and work solidly for the prosperity of the pursuit, it not only shows a pleasing prospect, but it also assures its ultimate success.

GLEAMS OF NEWS.

The Anatomy and Physiology of Bees was the subject of a lecture recently delivered by Mr. John Aspinwall, at the Cooper Institute, New York. The lecture was illustrated by stereopticon views. The *New York Times* gives this amusing account of it:

While in its physical make-up the bee is in many respects the opposite of man in its habits and tricks, yet it very much resembles the lord of creation, and were bees to be transformed into men, some would undoubtedly go into the police force, or in the board of aldermen, while there would not be a few successors to Jake Sharp, and to the inexperienced young toughs who get clubbed by the police, and are then sent up to the penitentiary for dishonesty and general "sass." The occupations of walking delegate and dude mashers are also found in apian society.

The little bee, that is, the worker, is a horny-skinned child of toil. It is incased in rings and shields of smooth horn to shield it against attacks of its own species, and it toils as long as there is light. It has not got backbone like a man or a mule, but instead it has a little sting that serves its purpose just as well, and thus manages to maintain its rights. Between its tongue and sting there is a complicated mechanism that is of great use to the farmer and to nature. Aside from the honey that it distills, and which is worth thousands of dollars annually to the farmer and to commerce, its habit of poking its head into flowers and covering it with pollen, which it brushes off into other flowers, renders it a benefactor to nature in fertilizing flowers.

Before the advent of the bee in Australia, it was impossible to get any seeds of red clover there. Of course its process of storing honey might not suit the most fastidious taste, but honey is partially digested cane-sugar, made so by the aid of bee saliva, but as the bee is a perfectly clean little animal that revels in nectar all day long, these little irregularities must be overlooked. Besides, it uses a different mouth for the honey.

The bee is a good flyer, but as its wings are smaller in proportion to its body than are those of the eagle to the king of birds, it has to flap them more frequently, so it flaps away at the rate of 446 flaps to the minute. It has no lungs, but a system of tiny air-tubes extend through all parts of the body, and these it packs with air when it wants to fly. Neither has it a heart, but a dorsal vessel that pumps the blood to the head. The head, as magnified on the screen, is not a beautiful object, and as it is not the center of the nervous system, it would not miss it very much if cut off, if it were not for the eyes, two of which have 4,000 lenses each to see the honey-flowers afar off, and two others to assist in doing the microscopical work in the hive.

The entrances to the hive are very carefully guarded by sentinels, and every bee on arriving at the door is challenged by them with their antennae. If it can give the countersign it is admitted to the sanctuary, but if it cannot, it is in danger, for bees are very nervous insects, and draw stings on the slightest provocation. The applicant must be a thief, and old thieves are detected by experienced sentinels, but the form of challenging must be gone through first. The old thief-bee is fat, sleek, shining and very suave. If caught by sentinels it will at once try to make a deal and offer the policemen some sugar, and while they are eating, it either slips in and fills up at the cells, or it retreats and tries another hive. If the sentinels are incorruptible, the thief humps itself, then draws its horny shields

tight around it so that the stings of the policemen may not penetrate, and runs. A young thief stands up to fight, and gets clubbed. It learns by experience.

The queen-bee has not such a very easy time. She has plenty to eat and eats it, and flies very little; but as she has to lay all the eggs of the colony, and often lays more than her weight of eggs in one day, the bees begrudge her nothing, but let her have her own way everywhere.

The drone is the dude and walking delegate of the hive. He is not very numerous, however. He is fat, and spends his time eating honey, flirting with the girls and the queen, and then takes a quiet nap in the sun. When his charms no longer please he is driven out, and if he cannot get a berth in another hive, he starves. The little worker, however, according to the lecturer, does not fare much better. She lives for about six weeks, when she becomes feeble, her wings get torn and fringed, and she lies down to die in the field, refusing to return to the hive and become a burden to the colony.

Paper has been used for so many things that we are not surprised at any suggestions in that line now. We have bee-hives, railroad car wheels, and a score of such things made of paper, but we draw the line at organ pipes, that is not only humorous but musical. An exchange is responsible for the following item on the subject:

A novel application of paper pulp has recently been discovered, and consists in the production of organ pipes from that material. The origin of the industry is somewhat curious. Crespi Riguzzo, the curate of a little Italian village, was desirous of supplying his chapel with an organ, but as the commune was too poor to find the necessary fund, he and an engineer of the name of Colombon hit upon the idea of making the pipes of paper pulp, which gave such satisfactory results that the patent has been sold in Germany for £2,500.

Pruning Fruit Trees.—We occasionally meet with persons who think that trees, in order to bear properly, should be pruned every spring. Similar persons think they cannot start the year aright without a dose of spring physic of some kind. The trees may need pruning, but, at this season or at any other, one rule should be observed. No branches, large or small, should ever be cut away without a reason for it. One should be able to say to himself, why will it be better for the tree to remove a certain branch than to let it remain? If this rule were observed, there would be much less pruning than at present.—*American Agriculturist* for March.

Convention Notices.

There will be a meeting of the Susquehanna County Bee-Keepers' Association at the Court House in Montrose, Pa., on Saturday, May 4, 1889, at 10 a.m. H. M. SEELEY, Sec.

The Des Moines County, Iowa, Bee-Keepers' Association will hold its annual convention in the Court House at Burlington, on April 23, 1889, at 10 a.m. All bee-keepers are invited. JOHN NAU, Sec.

The 11th annual session of the Texas State Bee-Keepers' Association will be held in the apiary of W. R. Graham, of Greenville, Hunt Co., Tex., on May 1 and 2, 1889. All bee-keepers are invited. The last meeting was held here last May, and was the best ever held. So we look forward to a good time next May. A cordial welcome and hospitality will be tendered to all who come. G. A. WILSON, Sec.

Pat Buys a Bee-Smoker. (he has heard somewhere that a smoker is necessary to subdue the bees; he gets one, and is examining it). Shure, and it's an illigant poipe ye'll make entolrely, and wid sich a foine large hole ye have to dhrav wid, and a lovely bit of wood to hould by—but, whisha! where does the terbaecy go? (Turns it over, and at last pulls off the end). Bedad! it's a terbaecy jar ye are wid hould enough for a wake and niver a poipe at all, but I'll thry ye. (Puts in all he has, lights up, and sucks contentedly with the nozzle in his mouth.) Arrah! ye little stinging bastes it's me revenge I'll be taking av yer, for whin ye made me face like a pertatie, and the praste himself didn't know me. (Squeezes the bellows accidentally, and gets a good puff or two internally.) Augh, augh, it's—augh—bad luck to ye for stame Injin, ye've clane kilt me entolrely. (Is about to give up in despair when the local expert arrives.)—*Honey-Suckle in the British Bee Journal*.

Good Prospects.—A few weeks ago we asked for reports as soon as it could be determined as to the condition of white clover in the various localities—some having reported that it had been damaged by the freezing and thawing, being uncovered with snow. Mr. C. H. Dibbern, of Milan, Ills., on the 7th inst., makes this report on the subject:

I have carefully examined the white clover in this vicinity, since the ground has thawed out, and find it in excellent condition. I have also taken out 25 colonies of bees from the cellar, and they are all right, too, being exceptionally bright and healthy. I do not think that our winter losses will be over 2 per cent. With improved hives, a better system of management, safe wintering, and an assured honey yield, I consider the prospects very good.

Mind and its Mysteries.—It would be very nice if we could put a mind under a bell-glass as we do a bee-hive, and watch the coming and going of fancies, and the laying up of thoughts—sweet fancies gathered from flowers of fact in memory's cells.—*Rev. James Hamilton, D. D.*

Catalogues for 1889 are on our desk from—

Thos. G. Newman & Son, Chicago, Ills.—36 pages—Bee-Keepers' Supplies.

H. E. & E. L. Pratt, Marlboro, Mass.—16 pages—Bees, Queens, and Apianian Supplies.

Dr. G. L. Tinker, New Philadelphia, O.—20 pages—Syrlo-Albino Queens and Bees and Apianian Supplies.

H. H. Flick, Lavansville, Pa.—4 pages—Poultry and Turkeys.

Christian Weckesser, Marshallville, O.—8 pages—Seeds, Plants, Potatoes, Bees, etc.

H. P. Langdon, East Constable, N. Y.—4 pages—Bees and Queens.

J. M. Hicks & Co., Indianapolis, Ind.—1 page—Bees and Apianian Supplies.

Charles A. Green, Rochester, N. Y.—50 pages—Nursery Stock.

QUERIES AND REPLIES.

Amount of Drone-Comb for a Single Colony.

Written for the American Bee Journal

Query 618.—How much drone-comb should there be in each hive to place its colony in a normal and thrifty condition?—S. G.

There need not be any.—A. B. MASON.

Not over 3 square inches.—WILL M. BARNUM.

As little as possible is enough.—R. L. TAYLOR.

Six inches square, in the aggregate.—MRS. L. HARRISON.

Three or four inches square would be plenty.—J. P. H. BROWN.

The bees will take care of that.—H. D. CUTTING.

None, unless you wish drones from that colony; then very little goes a long way.—A. J. COOK.

I would not put any in. The bees will get in a little in spite of you.—C. C. MILLER.

The least you can get built. The bees will look after that, if you try to have none.—EUGENE SECOR.

There will always be sufficient to meet Nature's requirements. How to prevent *too much*, is a wiser consideration.—J. M. HAMBAUGH.

From 2 to 6 square inches, or just enough so that the bees will not cut down worker-comb to build drone-comb.—G. M. DOOLITTLE.

My *design* is to have none, and with this design in plain sight all the time, I have more than I want. A queen-breeder will properly have a different view.—J. M. SHUCK.

None are needed, except for queen impregnation. Two full sheets of drone-comb in a good colony, in an apiary of any size, are sufficient for the entire apiary.—DADANT & SON.

Very little; in fact I do everything possible to prevent them having any at all. It is better policy to select one or two colonies of extra nice bees, and give them a frame of drone-comb for the purpose of supplying drones for the apiary.—C. H. DIBBERN.

I never put in any (except in a few choice colonies for having drones to rear queens), as the bees will always fix some places in the combs for the queen to lay drone eggs.—P. L. VIALON.

Now here comes a question about which I differ from the "books." My experiments with colonies on *perfect all-worker combs*, has led me to the conclusion that the presence of drones

is not essential to normality in a colony of bees, when speaking of colonies as individuals. The whirring noise of the drones' wings in the throng of busy workers is as assuring to the colony that has no drones, as it is to those that have them. Neither does the absence or presence of drones affect the swarming fever, in my judgment. Notwithstanding, I prefer to give all my best colonies some drone-comb.—G. W. DEMAREE.

A long discussion could arise regarding the word "normal." I have had strong, thrifty colonies which gave an immense amount of surplus honey, that had not a drone-cell, nor a drone in the hive, the whole season through.—JAMES HEDDON.

That will depend upon the age of the queen and the conditions of the colony. When I know just what the word "normal" means, I may be able to answer; but different minds give a different meaning to it, so that it is impossible to decide just what the word means, unless more is stated.—J. E. POND.

Normal and thrifty conditions may not go together. A colony may be more thrifty when it is not normal, than when it is. A colony is normal when it has the amount of drone-comb which it would build if left to itself; but it will be more thrifty if it has only a few square inches of it.—M. MAHIN.

Permit just as little drone-comb as possible, and then you will have "an abundance." If you want drones from that special colony, you might permit more drone-comb than usual.—THE EDITOR.

Rearing Drones when Supplied with Worker Foundation.

Written for the American Bee Journal

Query 619.—Will bees rear drones in a hive supplied with full sheets of worker foundation?—G. G.

Yes.—H. D. CUTTING.

Yes.—J. P. H. BROWN.

Occasionally.—WILL M. BARNUM.

Yes, a few.—R. L. TAYLOR.

Yes, but very few.—C. C. MILLER.

Yes, to a limited extent.—J. M. HAMBAUGH.

They will rear all they need.—EUGENE SECOR.

Occasionally very little; usually not at all.—A. J. COOK.

Yes. They will make places for a few.—M. MAHIN.

Yes. Bees will have some drone-comb anyway, according to my experience.—G. M. DOOLITTLE.

If you mean the lower hive, they will rear a few, if you allow them to swarm naturally.—MRS. L. HARRISON.

Yes, they will be almost certain to find some place where they will rear some. If no better place offers, a few drones will be reared by lengthening out worker-cells.—C. H. DIBBERN.

Certainly not, unless, as is sometimes the case, they build a few drone-cells upon worker foundation.—JAMES HEDDON.

Yes. They will enlarge the worker-cells in the lower corners of the comb, sometimes only on one side of it; and they will frequently enlarge cells in different parts of the comb.—A. B. MASON.

Yes; there are always some places where they will, and if there are none, they will make some. Foundation limits the drones, but does not entirely prevent them.—P. L. VIALON.

There are always a few corners or some places where the foundation stretches a little, where drones will be reared; but the extensive and unprofitable production of drones will be prevented.—DADANT & SON.

Yes, more than are wanted. Foundation does not prevent drone-rearing, but curtails it—keeps it within bounds. There are spaces often in the edges of the combs, also in the bee-space around the frames, where they may be built. I have seen the central space in sectional hives entirely filled with them.—J. M. SHUCK.

Yes, most certainly. You cannot prevent Nature from carrying out her own operations. Not as many drones will be reared, to be sure, but those that are reared in worker-cells, will be dwarfed in size. To prevent excess, I use young queens, and a small amount of drone-comb.—J. E. POND.

If the combs are not perfect, and do not fill the frames perfectly, a few drone-cells will be fashioned by the workers, and a few drones will be reared. But with good sets of all-worker combs drawn from foundation, I work many colonies that are positively without drones at all times.—G. W. DEMAREE.

Yes; the dictates of Nature will be obeyed. The bees will enlarge cells at the corners to accommodate the rearing of a few drones.—THE EDITOR.

A Favorable Word from any of our readers, who speak from experience, has more weight with their friends than anything we might say. Every one of our readers can lend us a helping hand, in this way, without much trouble, and at the same time help to scatter apicultural knowledge and promote the welfare of our pursuit.

CORRESPONDENCE.

FOUL BROOD.

Spring Care of Bees—How to Distinguish Foul Brood.

Written for the American Bee Journal
BY RANDOLPH GRADEN.

As the winter has been very mild and pleasant for bees, so far they have wintered well; but as the most trying time is yet to come, it is necessary to see that they have plenty of stores, for if the warm weather should continue through February, the bees will start breeding early, and consume considerable honey.

As March and April are very trying months for bees, too much care can hardly be given them, so that the brood does not get chilled. Colonies that are expected to be short of stores, or are weak in appearance, should, when the weather is warm enough to admit of so doing, be examined, and the brood-chamber contracted to suit the size of the colony, and, if short of stores, they should be fed.

Colonies that are not doing as well as they ought, or are not doing as well as those around them, should be examined to see if they have a queen, and if not, a queen should be given them, or a frame of eggs and brood, so they can rear their own queen. They ought also to be examined to see if they are affected with the disease called "foul brood" (or *bacillus alvei*), as we hear that there is a great deal of that disease in the country.

Appearance of Foul Brood.

In its first stages, the larvæ when attacked begin to move unnaturally, and instead of being curled around on the bottom of the cells, they sometimes turn in such a way as to present their dorsal to the eye of the observer, and it may then be noticed that the color of the larvæ is somewhat yellowish instead of being pearly white. Larvæ thus affected seldom are sealed over, but such grubs as are further advanced in growth before the disease strikes them, are in due time sealed, but as they die, their bodies turn brown and become a putrid mass, the cell sealing sinks, and a small, irregular hole may be seen in the capping. The bees may also be seen very energetically fanning at the entrance of the hive, and in advanced cases an indescribable odor may be observed; and if the cappings of the diseased cells are removed, a very brown, coffee-colored mass will be seen at the bottom of the cell, which is so tenacious that if a head of a pin

is inserted into the mass, it may be drawn out, a thread-like and ropy substance. The foregoing are the general indications of the disease.

Propagation of Foul Brood.

Foul brood is a very contagious disease, and if started, and not properly treated, so as to check its progress, it will rapidly spread from cell to cell, and from colony to colony.

As to the propagation of this disease, the conclusions are varied, and as yet not fully understood; but many of our leading apiarists have the idea that the bees, while robbing the depopulated colonies, carry the bacilli or spores on their bodies, or in the honey from apiary to apiary, and from hive to hive. Some go even so far as to think that if a bee visits a flower that has been previously visited by a bee from a diseased colony, the spores of the disease can be picked up in that way, and carried to the hive. I do not think that this is quite correct, and my reasons are these:

About three years ago I noticed a colony that was in advanced stages of the disease, that was being robbed, and upon investigation, I found that the robber bees were located less than half a mile away, and the robbing had been going on for some time, as quite a line of bees were going to and from the hive, and most of the honey from the outside frames had been carried away by the robbers; yet, strange as it may be, no disease has appeared. This shows that the honey contained no spores; also that the bees, by flying less than half a mile, carried no spores to affect the colonies that contained the robber bees. Still, when the disease is once started in an apiary, it spreads very rapidly.

Now if the honey contains no spores, the question would arise, how is the disease propagated? Would it not be reasonable to suppose that it is carried from hive to hive through the air, as an indescribable and nauseating odor is emitted from the hives where the disease is somewhat advanced? What is odor, no more nor less than very minute parcels from the substance from which it arises? and in these progressive times in bee-culture, when bees are sold by the pound, and bees and queens are shipped and sent through the mails from State to State, and from country to country, the disease may also in this way be carried from one country to the other.

It may, after being once started, if not properly treated, become hereditary; as one of our Professors has said, that a queen reared in a foul-broody colony would not live over one year, which I know is not always correct, from the fact that I have seen a queen

that was reared in a very foul-broody colony, that lived a part of three years, and lived through two winters; yet if not always treated in the brood-rearing season, her progeny would be affected, and foul brood again appear. This colony was examined in the latter part of August in the third summer of her life, and the brood was all apparently in a healthy condition, yet after leaving them without treatment for 21 days, upon examining the colony, it was again found to be affected with the disease, and upon giving them a heavy dose of the treatment in the forenoon, they swarmed out and left the apiary, going in a southerly direction. This shows that it would be very dangerous to procure a queen that had been reared in a foul-broody colony.

I think that I have shown some very good reasons, as to how *bacillus alvei* get into a colony. It is also quite certain that very many bees of a colony may be diseased for weeks and even months with this bacillus, and yet foul brood may not be seen, as bees clear out infected grubs so that the infection may not be seen, and yet exist. As to the method of treatment, it is varied, as some use salicylic acid, and others use phenol (carbolic acid); also camphor, powdered coffee, dairy salt, and a preparation of salicylic acid, bi-carbonate of soda, dairy salt, and soft water; also thyme, sulphuric acid, etc., and the "starvation plan." It is evident that the disease yields very readily when properly treated.

Taylor Centre, Mich.

SWARMING.

A Woman's Experience in Keeping Bees.

Written for the American Bee Journal
BY MRS. MARTHA ANDERSON.

We have had a mild winter, and my bees, I think, are wintering nicely. Last summer we had a very strange season. My bees commenced swarming on May 16, and kept it up until Aug. 21. They stored no honey the forepart of the season at all, but I suppose they must have gathered enough to stimulate the queen, and to feed the young bees. I do not think I ever saw bees multiply like mine did all through the season. The frames were full of brood in different stages of development, and I kept close watch of my bees, so as not to lose any swarms, until in July, when I thought they had swarmed all they were going to, and as there was no honey for them to get, I found out that they had been swarming all the time, and my neighbors had been getting them. I knew that they

were mine, for I have the only Italian bees in the neighborhood.

After I found that they had taken another "round" of swarming, I began examining them, and took out as many as 12 queen-cells to the hive. From Aug. 15 to the 20th, I examined all of my colonies, wanting to know how many I would have to feed. There was only a few but what had just about a spoonful of honey to the hive, and I thought it would be quite an undertaking to feed 32 colonies that were so strong. I had 10 colonies in the spring of 1888, and they increased to 32 strong colonies.

The fall honey-flow commenced about Aug. 21, and I do not think that I ever saw bees work so hard as mine did. They filled the brood-chamber in a very short time; altogether they stored 650 pounds of nice comb honey in one-pound sections. The flow continued four weeks, or until the frost came. When one swarm issued on Aug. 5, I was entirely out of foundation for them to start on, and I did not get any, because I thought I would not need any more. I took a frame out of another hive, and put it in with a little syrup made of granulated sugar, and in two or three days the queen was laying, and they went to work making comb in which to store honey. That colony filled the brood-chamber and stored 16 pounds of surplus honey besides.

I put the bees into winter quarters in November, and the hives were all that two could lift. I have a long shed for them, open to the east, and packed them in straw. They are all doing nicely. There are not many dead bees to be seen as yet. I think that there will be danger of them dwindling in the spring, on account of the open winter we are having. I like the BEE JOURNAL very much.

Bushnell, Ills., Feb. 23, 1889.

THEORIES.

Theoretical Knowledge in the Art of Bee-Keeping.

Read at the Indiana Convention
BY G. K. HUBBARD.

The proper place for theory to end and practice to begin, before a person's knowledge shall be accepted by others without numerous reservations or exceptions, is a difficult matter to decide in the thousand-and-one questions that are constantly coming up in life; and of course in a pursuit like bee-keeping, where much thought and study are a necessary adjunct, the question comes with more than ordinary force.

As in every other controverted question, there is in this a "golden mean" to strike; and in the judgment of the writer, that person, who has reached the half-way point between the two extremes, is the successful apiarist.

I am inclined to the opinion that bee-keeping need not necessarily be carried on by specialists, with their hundreds of colonies, but that every farmer or tradesman who can take an interest in bees, should keep a few to supply honey for home use.

Among the great mass of bee-keepers, as we find them scattered over the country, there is far too little theoretical knowledge. This is shown by their ignorance of many of the facts concerning the habits and characteristics of bees, that the more intelligent apiarist is as familiar with as he is with the names of his near relatives. With such persons, a thorough study of the theory of bee-keeping will give them more confidence in themselves whenever they wish to vary from some old plan, or when a new difficulty presents itself.

In 1881, when I was quite young in the bee-business, a gentleman asked me to unite 2 colonies of bees for him. I told him I never had done the like, but knew how it was done (you see I had the theory), and a little later, when I had the 2 colonies in one hive, acting as much at home as though they had always been together, I had made a start in the "practical;" but the theory first learned from books, was as valuable as though the same knowledge had been acquired from experiments.

James Heddon has recently said: "I know pretty well who are the practical honey-producers in this country. One who has read and written for papers, and produced honey on a large scale for twenty years knows the difference immediately between a theoretical and practical writer. Such a one, when reading an article, no matter how eloquently and skillfully written, will at once and correctly determine whether the writer has an apiary in his brain, or in his back yard. I look with interest for articles from such men as R. L. Taylor and others I might mention, who ship their honey to market by the carloads."

Here is a good point. We accept information from people whom we know are well posted in apiculture theoretically, with much more certainty, if it is backed by large practice, and especially so if abundant success has crowned their methods of procedure. Let us not forget, however, that it is rarely that a person will succeed in anything by being a mere imitator. You may read a plainly written article on some subject, that takes in more than a brief operation, like the

uniting illustration just used (say for example, "The production of comb honey," or "A season's procedure in queen-rearing"), and while we might all be pleased to get the writer's views, not one progressive, intelligent apiarist would do exactly as described.

Your own ideas and methods will creep into all that you do; and thus, unconsciously, you adopt a plan of your own, and with reasons, too, for your method. You see the theory of some one else, and your practice will not always work; but the theory varied to suit your own surroundings, and thus applied to your practices, will be found to harmonize very well. This implies intelligence and a qualification we may call "tact."

I mean by this, good judgment and adaptability; and I consider it perfectly fair to insert this qualification, because I believe that a person who has it not, would be more likely to fail in almost any business. And as bee-keeping is far from being an exception in this respect, it is only fair to assume that a reasonable degree of tact will be employed in reducing to practice the ideas suggested by others.

Keeping in mind the idea which this construction of the word "theoretical" implies, it will be seen that we can very properly be theoretical apiarists to quite an extent. But if you should narrow down the meaning of theoretical, so that it applies only to that species of speculation which never will receive a decisive answer, and from the nature of the case cannot be reduced to practical advantage in the apiary, then of course there can be but one answer to the question.

The bee-keeping fraternity cannot be benefited by people who "dream dreams and see visions." We wish to spend our time on that which will make us more successful from a dollar-and-cents stand-point; that which will enable us to more completely control our colonies as we wish; that which enables us to put a first-class article of honey on the market, with the least expenditure of labor; that which will enable a beginner to expect a reasonable degree of success when he puts in practice the information that he has gained from others. Such theoretical bee-keeping is at once theoretical and practical; and practical theories are of great value, because they carry with them satisfactorily explained reasons, and give the possessor that intelligence and perception that is at the extreme opposite of "luck."

In this busy, pushing world, it is the intelligent, active man who wins—the man who keeps posted, the man who is quick to perceive and apply valuable points in what he reads. A person who is well informed in current bee-

literature, is said to have the theory of the pursuit well learned; and I maintain that, as the pendulum swings between such theory and that other method of procedure—which is nothing more or less than driving ahead in ceaseless, wearisome labor in the apiary, with no thought for new developments, or the plans of others—that between these extremes the successful apiarist will be passed as the pendulum passes the golden mean between them. La Grange, Ind.

WINTERING.

Saving Stores in Wintering Bees in Cellars.

Written for the American Bee Journal
BY JOSEPH BEATH.

In answer to Query 613, on page 101, in regard to wintering bees outdoors, one replies thus: "The extra amount of honey used, is used as fuel to keep the bees warm. Is the fuel you burn in your stove, in keeping the house warm, wasted? If so, had you not better move down cellar with your family, so as to save it?"

Now that is precisely what people have done in Kansas and Nebraska, where both lumber and fuel is scarce, and the soil is generally dry. But who would think of doing it where both fuel and lumber were plenty, and the subsoil full of water?

Again, a part of another answer reads as follows: "Honey used to keep the bees in the hive warm, should not be deemed *wasted*; wood or coal used to keep humanity warm in houses, is never thought to be *wasted*—each serves the purpose intended."

Exactly so! because a house is the best protection against the elements man has yet been able to devise, and the better that house is built to retain the heat, the less fuel it will take, and the more comfortable the family will be. But, suppose instead of going into the house to make the fire, you should go into the back yard, erect an Indian wigwam, build your fire in it, and take your family there to warm, say with the mercury at zero; would not most of the fuel and the comfort of the family be wasted then? And is not this nearer the condition of a colony of bees in a common hive, left out-of-doors in an average Northern winter?

Of course, the wigwam was all right for the Indian, for it was the best he could do; but surely one-half of the men that keep bees, already have cellars that they could put them into, at least in the Northern States, where it is profitable to do so; and it seems to

me, all that might be saved and is not (less the cost of saving), is clear loss.

I leave out of the question the disputed point as to which will come out best in the spring, but I believe, say north of 40°, 41° or 42° north latitude, it has of late years been in favor of the cellar. A large part of the spring dwindling in cellar-wintered bees, can be avoided by letting them alone until warm weather comes, and they can go to work.

The greatest bee-man that used to be in this county, used to winter his bees successfully until about March 1, and then he would put them out, and clean out all the hives, and by May, when they could work, they were half dead; and finally one spring they all died.

Corning, Iowa.

STRONG TEMPTATIONS.

You might as well say to the bee,
As she 'lights on the lip of a flower:
"Its beauty you're welcome to see,
But the honey must stay and get sour."
Do you think she would listen to you long,
With the treasure just under her eyes?
No; she'd find the temptation too strong,
And make a bold dash for the prize.

Or, supposing a bird on a tree,
Where cherries were rosy and sweet,
And you told it to let them all be,
For you thought them too pretty to eat:
Do you think that the bird would obey,
And with feasting its eyes be content?
No; "To let such fruit spoil," it would say,
"Was never Dame Nature's intent."

So do not be cruel and scold,
And ask me a promise to make,
That I'll never partake of the wealth,
That's forbidden to any to take;
For honey was made for man's use—
Though the bee may utter "Nay, nay!"—
Yet 'tis taken away just the same,
And not even a "Thank you" we say.
—Selected.

EVOLUTION.

The Growth and Atrophy of Animal Organs.

Written for the American Bee Journal
BY J. F. LATHAM.

In that pearly atom, the ovum of the queen-bee, are stored the concentrated efforts of nature for limitless epochs, which now develop a perfect insect in sixteen days. The food supplied to the larval bee during the various stages of its growth, bears a strong resemblance to that which is supplied by the co-operating agencies, to nature's spontaneous offspring at a corresponding stage of development. The manner of receiving that food by glandular absorption is very nearly the same in each. At a certain stage the molecular diet is discontinued, and the organs of generation are bared in their

growth, illustrating very definitely at what point in the development of cosmic life the same act was consummated by the hidden agencies of nature; thereby establishing the individuality or duality of the sexes as seen at the present time.

From this stand-point, which embraces, so to speak, a view of the sphere of the reproductive agencies in the economy of nature, the evidence is very nearly absolutely conclusive, within the scope of our present sense, that in their primitive stages of development, organisms pertaining to animate life were (and are) androgynous. By discarding conditional conclusions, and assuming this to be a fact, the evidence is as conclusive that the entites of each distinct species would comprise but one gender nominally, but in reality possess the germs of both in a stage of development compatible with the grade of progress to which they had arrived in their evolutionary rounds.

In that occult description of the "creation," delineated in the first chapter of Genesis, we are taught that the waters were commanded to bring forth the moving creature having life, and fowl that may fly in the open firmament. Next we are taught that the earth was commanded (admonished) to bring forth the living creature after his kind, cattle and creeping thing, and beast of the earth after his kind; all in the singular number and masculine gender.

Again, we are assured that the beast of the earth was made after his kind, and the cattle after their kind, and every creeping thing upon the earth after his kind. Lastly, in the order of progressive "creation," man appeared in the image of his Maker—man, by possessing faculties, or attributes, superior to the collective forces of the whole animal "creation" that preceded his advent.

In the second chapter of Genesis, in review of the first chapter, we are taught that man was formed of the dust of the earth, the breath of life was breathed into his nostrils, and man then became a living soul—an intelligent being. As this narrative of the "creation" (purported to have been drawn from Acadian and Turanian sources, more than a thousand years prior to the compilation of the Book of Genesis, as evinced in resurrected Assyrian literature), is but an epitome of the occultism which underlies the development of modern geological research, it requires no stretch of the imagination to grasp the fact that in the first stages of evolution pertaining to the present order of things on this planet, in animate organic life, that which is termed sex, was represented in specific language as a personifica-

tion of the ubiquitous life power so subtly expressed in Oriental physics, as the only one living element of the Universe—the spiritual and material principle, which, although unconscious, and in an indefinite sense “non-existent when separate,” develop “consciousness and life when brought together.”

Could we go back to the dawn of evolution, when cosmic matter received the first impulse of the spiritual efflux, and imperceptibly responded in the primordial ripples of life, and accompany it in its cyclic rounds through the countless ages of changing progress until it culminated a comparatively perfect organism, the problem of atrophy in useless members of the body would be readily solved.

As the matter now appears, it seems that the most rational solution of the phenomena would be that, Mother Earth, stimulated by her surrounding correlatives, takes the lead in the changing courses of destiny relative to her offspring, and molds them to the sway of the ruling impulses accompanying the successive periods of growth and disintegration consonant to their situation. If the life element will only admit the existence of monads, Nature is in a condition to nurse them to existence. If the cosmic elements warrant their existence, molecules will make their appearance.

Another degree, and the entites are prompted to life at the starting point of organic beings—beings organically androgynous—thrown from their differentiating centres in numberless divergencies, supported in their impetus by the agencies which gave them birth; and destined to survive or subside, as the cyclic or cataclysmic changes incident to their progress directed. If, in their passage along the ascending line, the revolutionary changes from water to land rendered them amphibious, and legs and feet were needed to harmonize their existence to the change, the same agencies that prompted the dawn of being was ready to administer to their needs. While in the water, scales were the best protection for their bodies, fins the best means for locomotion, and gills the best organs to convey oxygen to their circulating fluids. When the drift of circumstances decreed the air to be their theater of life, the hidden forces which evolved those circumstances, gave them wings as means of transport from place to place, when searching for sustenance or habitation.

If in a cooling atmosphere, the combustion necessary for their existence required protection, the “Elemental Guardians” supplied them garments of hair, fur or feathers, as their sphere of life required—and, Nature being im-

partial in the exercise of her functions relative to her multitudinous designs, no discrimination was made, or is made in her dealings with any one species of (animal) life in its journey from the infinitely small to the infinitely great—from inorganic matter to organized intelligence. When, by changing conditions, members once useful to the body become useless, disuse would render them mummified indices of by-gone functions; thus displaying in the atrophied glands of the queen-bee, that parthenogenesis was, at one period in the existence of her species, a more substantial reality than at its present stage of development; and that one of the functions of our “baboon ancestors” is indicated in the mammary glands of their progeny, leaving an opening for a shadowy conclusion that, with the countenanced authority of ages, as to the merits of a sacred trust, a discrepancy exists in the primeval distribution of the generative attributes.

Cumberland, Maine.

HORTICULTURE.

The Relation of the Honey-Bees to Horticulture.

Read at the Nebraska Convention
BY REV. E. T. ABBOTT.

A very close connection exists between the two subjects, and the relation, one to the other, should be considered in all its bearings. It is evident that flowers are useful to insects, but the question arises, are the insects of any use to the flowers?

First, it is to be seen what benefit the insect is to horticulture, and then what harm, if any, the insects cause to flowers.

An ordinary flower will be taken for an example. Inside of the corolla is a set of organs called stamens, and on top of them is an organ called anther, containing a powder known as pollen, which carries the male element of the flower, or the sperm-cell. In the center of the flower is another organ, or organs, called a pistil, composed of three parts, the stigma, style and ovary. The ovary is a hollow case or pod, which contains rudimentary seeds, and in which are found at the proper time the embryo sac that contains the germ-cell. To produce fruitage the sperm-cell must be brought into immediate contact with the germ-cell. The question is, how are these two elements to be brought together?

When all of the organs are found in one flower, or in the case of the one described, the process is very simple. A gentle movement of the wind after the anther has ripened will shower the

potent grains of pollen down upon the receptive stigma. Soon there is found what is known as the pollen-tube, which, growing downward through the style, enters the cavity of the ovary, and guided by some mysterious yet unerring power, makes its way to the embryo sac. Movement, growth and all formation commences, and thus is formed the fruit and seed, in which lies beautifully folded the embryo plantlet of the future tree, bush, vine, or whatever it may be.

In some flowers the process of pollination is more complicated. They are so constructed that the pollen cannot reach the stigma, although in the same flower. In some instances the pollen dust is so constituted as to be of no use to the pistil of the same flower, and in many flowers the stamens and pistils are not fully developed at the same time. In these and in other cases some outward agency must be looked to, to bring the two elements together. This brings up another important part of the subject. Not only pollination is desired, but pollination in such a way as to secure cross-fertilization, preventing what is known among stockmen as “in-breeding.” Here comes in the work of the bees. In visiting the flowers they carry pollen from flower to flower, and thus do for the plant what it cannot do for itself.

It has been shown by experiments that self-fertilized plants, that is, fertilized by their own pollen, are generally much inferior in vigor and strength to those that are cross-fertilized. In many gardens and greenhouses bees are kept for this very purpose.

In this connection, lest some one may ask why this mixing up of pollen of various plants will not create great confusion by the production of hybrids, etc., it may be stated that Aristotle observed, over 2,000 years ago, that bees visit the flowers of the same species as long as they can, and this has been confirmed by later observation. The wind, and other insects than bees are valuable in accomplishing cross-fertilization, but many trees and plants have to depend upon the bee.

The question now comes up, do bees ever injure fruit? The prevailing testimony seems to be that, as a general thing, bees do not perforate flowers. The main ground of complaint has been that the bees injure the fruit itself, especially the grape. Prof. McLain, who is employed by the Government to make experiments in apiculture, has devoted considerable time to this subject. He confined a number of colonies of bees in a house, and endeavored by heat, etc., to bring

about drouth, and they were brought to the stages of hunger, thirst and starvation, the test lasting forty days. Thirteen varieties of grapes were placed before them, and every opportunity afforded the bees to appease their hunger, but in no case were the bees able to pierce the skin of a sound grape, or otherwise harm it. When the skins had been cracked or bursted, the bees lapped and sucked the juice out, but the sound fruit was untouched. My own experience has corroborated these statements. The jaws or mandibles of a worker-bee are not constructed for cutting hard, tough substances.

Permit me to make one remark in conclusion that does not properly relate exactly to the subject, but rightly grows out of it, I think. In religious matters I am inclined to be very liberal, and give the utmost liberty to others; yet it seems to me that no man can study carefully such statements as I have made and kindred facts without being forced to the conclusion that there is a "power not ourselves" behind nature, "which makes for righteousness," whether he agree with me, and call that power God, or not. To me all this is the manifestation of an Infinite Father, and I would it might be to all men.

St. Joseph, Mo.

COMB HONEY.

Some of the Practical Points in its Production.

Read at the Maine Convention
BY L. F. ABBOTT.

There was a time—away back so far that we do not care much about it now—that honey formed the great sweet of the world, and it held its place in the affections of our old-time esteemed relatives up to a little matter of time of about 200 years ago—more or less, a few years either way makes no difference.

The production of cane sugar and syrup by the production of the slaves in the seventeenth century (our remote relatives had not begun to imbibe the great moral lessons taught by the bees), had, in a great measure, displaced honey as an article of food, and while our several-times great grandfathers quite readily "caught on" to the idea of manufacturing sweets themselves from the products of the fields in the sugar-cane, they had the most ridiculously absurd notions concerning the wonderful little bee, that has not changed a whit in its instincts, habits or want of respect for its friends. Hence, while the bee was just as

wise then as to-day, and laughed out of both corners of its mouth at the old-time obtuseness of our relatives, in missing the real "business end" of the bee—for which, as now, they often gave emphatic pointers—for this reason slow progress was made in improvements in bee-culture, and instead of increasing the number of colonies, there were annually thousands of them destroyed with the brimstone match, in order to secure their honey. So, on account of this wholesale destruction of bees, and the lack of a proper knowledge of their instincts and their successful management, honey fell into comparative disuse for many years; and this state of things continued, with only slight improvement up to within a quarter of a century ago. Since that period the most wonderful strides have been made, both in the science of bee-keeping and the appliances used in the successful management of bees.

These wonderful improvements, and the close study and painstaking experiments that Yankee bee-keepers have adopted, have been the means of increasing the amount of honey-production immensely, and if this production continues to increase as rapidly during the next ten years, as it has in the last decade, may we not reasonably expect that honey will take its place among the leading products of this country?

Strength of Colonies.

A fundamental principle to be observed in the production of honey in either form—comb or extracted—is strength of colonies; and I would, if possible, make provision for the contingency of weak colonies in the spring, by having all colonies go into winter quarters strong in numbers. There are extremes to be avoided in both ways—too large colonies and too weak ones.

I mean by that, that the abnormally large colonies we often find in the apiary, where a part or all have been run for extracted honey, are not the best to winter, unless special provision is made in order to get them through, and then, my experience has been that it is better to divide such colonies immediately after the summer harvest is over, giving a laying queen to the queenless portion, and build up two colonies for winter in lieu of one. There is a strong liability that the large mass of bees in such a colony, left undivided, will die before spring, while on the other hand, the two medium ones, if properly taken care of, are pretty sure to survive the winter months.

These medium populous colonies in the fall—which may be called strong ones—as a rule, are the ones which will come through the winter, when

wintered in a good cellar, nearly as strong as when they are put into winter quarters in November. This may be accounted for on the supposition that early breeding commences, and their number are kept up by the production of young bees.

Now I know there is a point for discussion here; some of our best apiarists believing that it is injurious to the future prospects of the colony to have the queen commence laying before March or April; but it is needless to remark that it is the strong colonies which store the surplus honey in June and July, and take advantage of the white clover harvest. Then the question arises, how shall we attain to this maximum strength of colonies, unless we can start with strong colonies when put upon the summer stands from the cellar?

Now, on the other hand, a weak colony put into winter quarters in November or December, will be weaker in April or May. A little patch of brood will probably be found in such, the last of March. Such colonies cannot be expected to begin work in surplus cases, at least until seven frames of the Langstroth size are pretty well crowded with bees. Ordinarily this cannot be accomplished till the summer honey harvest is well advanced, unless such colonies are helped by stronger ones; and this is hardly a paying method.

All of our considerable apiaries contain more or less colonies of bees which do not come up to the standard of honey-production that others do. I know there are causes, other than the one I have set forth, to which the difficulty may be attributed in part. These are—some of them—want of prolificness in queens, disease in winter depopulating the colony, loss occasioned by age of bees, etc.

Then, if my premises are sound, the first point to be considered in the production of comb honey, is the oft-repeated injunction, to have strong colonies in the spring, and to accomplish this, we must adopt a plan at the close of the preceding honey harvest, to insure strong colonies of young bees to place in winter quarters.

Putting Bees Out of Cellars.

Spring now comes with its vicissitudes. The fact is generally admitted (disbelievers can learn by experience) that bees wintered in-doors are more subject to loss by spring dwindling than those wintered out-of-doors. To obviate this as far as possible, it is best to keep the bees in the cellar till May 1, if they can be kept quiet. There are exceptions to such a rule, for sometimes our seasons give us warm weather, and that continuously from

April 15. The past two seasons, early May brought cold weather, which the bees could have passed to better advantage in the cellar, rather than "noseing" around the willows with "overcoats and mittens on."

Stimulative Feeding.

The question of stimulative feeding in the spring is one of importance. There is no question but such feeding has an effect upon the colony in quickening their energies and giving them the impulse of breeding. This impulse is not confined to the queen alone, as some people seem to believe, but the energizing influence pervades the whole colony.

The question of feeding in the early spring to induce breeding is one which needs to be carefully considered, because it is easy to do more harm than good by adopting the practice. I believe it is better to feed in September for spring strength than in the following May, unless it be the very last of the month, as the seasons latterly have come to us.

Keeping the Bees Warm.

But there is one thing that is always in order in early spring, and that is, to take every precaution possible to retain the internal heat of the hive, and prevent ingress of cold from without. The bees have this provident care inherent in their nature, as is shown by their care in sealing up all cracks and crevices in every part of the hive before the advent of cold weather.

The moving of hives in the spring, and manipulating them from the top, as each hive should be when placed upon the summer stands, so far as is necessary to clean out all dead bees and remove moldy combs, and to contract the brood next to proper size for the colony; these manipulations necessarily sunder the carefully glued joints and crevices, leaving numerous ways for the cold to creep in, and warmth to escape from the hive.

This may be quite effectually prevented by the use of cushions, dry chaff and leaves—the latter is always preferable to chaff. Extra pains to tuck the cushions and quilts down, and not be sparing of the amount put on through May, will pay for the trouble.

For the reasons just stated, I would as far as possible winter bees in chaff hives, or change the colonies to such as soon as practicable in May. The chaff hive as now made is superior to the single-walled hive. To Mr. E. P. Churchill, of Hallowell, I believe, belongs the credit of making improvements in the chaff hive, which places it ahead of any single-walled hive I have used for the production of comb honey.

Lewiston, Maine.

HONEY-LABELS.

The Granulation of Extracted Honey—Report for 1888.

Written for the American Bee Journal

BY CHAS. K. BIXLER.

I have before me some labels bearing the following inscription: "This honey will candy as soon as cold weather begins, and is, in fact, the best proof of its purity."

Candying may be a proof in some localities, but is certainly not in this. I have at present honey in glass and earthen jars, both filled at or nearly the same time, of the same kind of honey, and having the same kind of covering. Both jars were kept in the same room, and subject to the same temperature. The honey in the earthen jar was candied long ago, but in the glass jar it is liquid still. Now if the glass jar had been labeled as above, and been sold, what would the purchaser have thought? He would have had some reasons for thinking that it was adulterated. It might leave a wrong impression.

In the winter of 1886 heart's-ease honey did not candy until very nearly spring. I believe that the labels should read so as to leave a possibility for the honey not to candy, something like the following: "This honey may candy," etc.

The Season of 1888.

In November of 1887 I put into a cave 35 colonies of bees. All wintered excepting two, which starved. But very few had honey enough to last until the time of white clover bloom. April was dry, cold and windy, and everything was very late. Box-elder blossomed the last of the month, and bees did very well on it for a few days.

May was cold and wet, and bees did nothing during fruit bloom. They had but little brood for the time of the year. White clover began to bloom the last of May, but yielded little or no nectar. Feeding was the order of the day during the first of June, but in the latter part of the month white clover yielded enough honey to start swarming. I had 6 swarms in an apiary of 33 colonies, mostly Italians. Black bees in this vicinity swarmed from one to four times each.

Basswood failed, and during the last of July some colonies absconded. A good deal of feeding was done. The fall rains began early, and continued through August, which produced an enormous growth of flowers. Beekeepers were hopeful, but just as the principal plants began to bloom, a hail-storm cut down everything in the flower line in this immediate vicinity.

The sugar-barrel was the only apparent outlet. The hail was on Aug. 10; on Aug. 17 bees were gathering enough honey to live on, and in a few days they began storing in the surplus receptacles.

On Sept. 12 the flow ended. From 36 colonies I got about 800 pounds of heart's-ease honey—about half comb honey, in one-pound sections. The brood-chambers were solidly filled, and bees have more honey this winter than any winter since 1885. The last was the third poor season in this locality; but white clover is in good condition, and we are hoping for a good flow of honey in 1889.

Honey sold here for 18 to 20 cents per pound for comb, and 10 cents for extracted.

On Dec. 4 I put the bees into a cave. The winter has been very pleasant so far, the temperature in the cave being at or near 42° Fahr. The bees seem to be wintering fluently, and very few dead bees are to be seen.

Hoyt, Iowa, Feb. 4, 1889.

CONVENTION DIRECTORY.

1889. *Time and Place of Meeting.*
 Mar. 13, 14.—Cedar Valley, at Waterloo, Iowa.
 J. J. Owens, Sec., Waterloo, Iowa.
 Mar. 30.—Agency, at Agency, Mo.
 T. S. Smith, Sec., Agency, Mo.
 Apr. 23.—Des Moines County, at Burlington, Iowa.
 John Nau, Sec., Middletown, Iowa.
 May 1, 2.—Texas State, at Greenville, Tex.
 G. A. Wilson, Sec., McKinney, Tex.
 May 4.—Susquehanna County, at Montrose, Pa.
 H. M. Seeley, Sec., Harford, Pa.
 May 21.—Northern Illinois, at Pecatonica, Ill.
 D. A. Fuller, Sec., Cherry Valley, Ills.

In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—ED.

SELECTIONS FROM OUR LETTER BOX

Bees and Toads.—E. E. Smith, Watertown, Wis., on Feb. 26, writes:

On page 102 Mr. E. Strong writes about toads eating bees. As I understand him, he says that toads will not eat bees. The toad that he was watching was either a cunning one, or a different species of toads from what we have here. I had one hive last summer that had a poor cover, and as I did not like the hive, I did not take the trouble to make one, so I put it under a shed. The floor of the shed was about 8 inches from the ground. I leaned a board from the ground to the floor of the shed, so that if any bee happened to fall on its way home, it could come up on the board. One night in the summer I heard a toad coming through the grass, as much as

a rod away. I step back to to see what it would do. It came on and up the board to the front of the hive, and there it stopped. The bees were running around in front of the hive, and one bee came in the direction of the toad, when the toad made a spring, and the bee was gone. The bee was as much as 10 inches away when the toad sprang. I saw it take as many as a dozen bees, and each time the toad took a bee, it stepped back to its place and waited for another. I saw the toad do it again the next night, when I shoved it up to the entrance of the hive, and let the bees punish it; then I took it to the garden, where it belonged. I like to have toads in the garden, as they are very great bug catchers.

Good Season Expected.—Christian Weckesser, Marshallville, O., on March 1, 1889, writes:

Bees seem to be wintering nicely. Much of the winter here was pleasant, but bees have not had much of a flight since November. Of late the weather has been rather severe, but it is moderating, and we hope to soon hear their merry hum again, and hope also to have a better honey season than we have had for several years. I think that the indications are such, and it is well, at this season of the year, to make preparations for it. Many farmers have neglected their bees because they have not been profitable, thus leaving the field almost entirely to those who will be wise enough to have their "dishes right side up" when the flow comes.

Honey Colic.—B. F. Barb, Joetta, Ills., writes thus on Feb. 27, 1889:

Nearly half the people in this locality dare not eat honey on account of its giving them the colic. What is the cause and cure for it? Who will answer?

As Mr. Barb is located in the same county as Chas. Dadant & Son, we referred the matter to them for answer. They say:

We do not know what to answer. Although this is at the other edge of the county, we do not think that the blossoms differ any. We have known of many people that honey made sick, and we find that all such people will easily become accustomed to eating and digesting it by using it regularly, in very small quantities at first. Usually, after the third meal, the stomach is used to it. We find, also, that granulated extracted honey digests

best, and that fresh honey is the reverse.

Sickness from eating honey often comes from incautiousness, eating too much of it, or eating it while the stomach is working on food not entirely digested, but in course of digestion. Honey excites the secreting glands of the alimentary ducts to such an extent that it is a good remedy for constipation, and when it is ingested between meals, the course of digestion is sometimes deranged by the influx of too much gastric juice, and pains, colics, etc., are the result. Honey being a laxative, it is best not to eat it in too large quantities when not accustomed to it. We do not know of any unhealthy honey produced in this vicinity.—CHAS. DADANT & SON.

White Clover.—Mrs. L. C. Axtell, Roseville, Ills., on Feb. 23, 1889, says:

On examining the white clover, Mr. Axtell found it injured some by the dry weather of last season, but he thinks if we get suitable rains, we may yet have a fair crop of honey.

Removing Bees from Cellars.—T. Walker, Ashton, Ills., on March 1, 1889, writes:

I would like to learn whether I must place my bees in the same spot when I take them from the cellar, that they were in when I put them into the cellar; or can I place them in a different part of the lawn, without danger of losing any of them?

[If put out of the cellar upon the old stands it may save some old bees—to the young ones it will make no difference; therefore it would be preferable, if convenient, to return the hives to the summer stands they occupied when taken into the cellar—though it may make but little difference.—ED.]

Uncapping Honey, etc.—Henry Durham, Sylvania, Ind., on Feb. 19, 1889, says:

Bees are wintering finely in this locality. I have 16 colonies mostly in chaff hives. Last night was the coldest of the season—7° below zero. When I was young, I blacksmithed for a living. I heard of a young blacksmith who made a pair of tongs; when he riveted them, he could not work them, so he laid them down and went to an old smith and said that he knew a smith once who made a pair of tongs and could not work them. The old smith said that he ought to have

heated the tongs and worked them. So the young man returned and finished them. I know a man that procured an extractor, and had no regular uncapping-knife; so he got a thin case-knife, bent it to suit, sharpened it nicely, tried to uncap a frame of honey, but the comb stuck to the knife like a piece of iron to the hand on a cold morning. Ought he to have warmed the knife? Let us hear about it.

Bees Flying Nicely.—Mr. C. W. McKown, Gilson, Ills., on March 5, 1889, says:

I put into winter quarters last fall, 99 colonies of bees in chaff hives; all are alive to-day, and apparently in fine condition, flying nicely, and seeming to enjoy themselves. As to the prospect of the coming season, I am no prophet.

Cooling the Cellar with Ice.—Wm. Pearson, Oswalt, Iowa, on Feb. 21, 1889, writes:

My bees are wintering nicely in the cellar. I put them in on Nov. 15, with the hives four tiers high. The weather at times here has been very warm, and the temperature went up to 52° in the cellar. At present we are having a cold spell. I will try to keep the bees quiet by putting ice in the cellar, which is not large, and I have 108 colonies packed in it.

Queenless Colonies, etc.—John Kerr, Cedar Falls, Iowa, on March 2, 1889, says:

I commenced the season of 1888 with 4 colonies of bees, being the second winter that I have had my bees out of the cellar. Two were rather weak. The season was very poor for surplus honey last year, and I obtained about 100 pounds of comb honey, had 10 natural swarms, and put 2 back. I have 12 in the cellar, which are doing well, to all appearance. Is it best to examine every colony in the spring to see whether they are queenless? If they are, what is the best course to pursue?

[Yes; it is desirable to examine all colonies in the spring, clean out the hives, and if any are queenless, unite them with a weak colony having a good queen.—ED.]

Please to get your Neighbor, who keeps bees, to also take the AMERICAN BEE JOURNAL. It is now so CHEAP that no one can afford to do without it.



ALFRED H. NEWMAN,
BUSINESS MANAGER.

Business Notices.

If You Live near one post-office and get your mail at another, be sure to give the address that we have on our list.

Give a Copy of "Honey as Food and Medicine" to every one who buys a package of honey. It will sell lots of it.

Dr. Miller's Book, "A Year Among the Bees," and the AMERICAN BEE JOURNAL for one year—we send both for \$1.50.

If you Lose Money by carelessly enclosing it in a letter, it is without excuse, when a Money Order, which is perfectly safe, costs but 5 cents.

New Subscribers can obtain the full numbers for 1888 and 1889 for \$1.80, if application be made at once, before all the sets of 1888 are gone.

Paper Boxes—to hold a section of honey for retail dealers. We have two sizes on hand to carry sections $4\frac{1}{4} \times 4\frac{1}{4}$ and $5\frac{1}{4} \times 5\frac{1}{4}$. Price, \$1.00 per 100, or \$8.50 per 1,000.

Preserve Your Papers for future reference. If you have no BINDER we will mail you one for 60 cents; or you can have one FREE, if you will send us 3 new yearly subscriptions for the BEE JOURNAL.

Please write American Bee Journal on the envelope when writing to this office. Several of our letters have already gone to another firm (a commission house), causing vexatious delay and trouble.

Honey.—We have for sale a quantity of Extracted Honey in kegs holding about 220 pounds each, which we are selling, free on board the cars, at 8 cents per pound for Amber and 9 cents per pound for White.

In order to pay you for getting new subscribers to send with your renewal, we make you this offer. For each yearly subscriber, with \$1.00, you may order 25 cents worth of any books or supplies that we have for sale—as a premium.

Apiary Register.—All who intend to be systematic in their work in the apiary, should get a copy of the Apiary Register and begin to use it. The prices are as follows:

For 50 colonies (120 pages).....	\$1 00
" 100 colonies (220 pages).....	1 25
" 200 colonies (420 pages).....	1 50

Red Labels for Pails.—We have three sizes of these Labels ranging in size for pails to hold from one to ten pounds of honey. Price, \$1 for a hundred, with the name and address of the bee-keeper printed on them. Smaller quantities at one cent each; but we cannot print the name and address on less than 100. Larger quantities according to size, as follows:

	Size A.	Size B.	Size C.
250 Labels.....	\$1.50	\$2.00	\$2.25
500 Labels.....	2.00	3.00	3.50
1,000 Labels.....	3.00	4.00	5.00

Samples mailed free, upon application.

Alfalfa Clover.—For cultivation of this honey-plant, see page 245, of 1888.—We supply the seed at the following prices:—Per lb., 22c.; per peck, \$3.00; per half-bushel, \$5.50; per bushel of 60 lb., \$10.00. If wanted by mail, add 10 cents per pound for bag and postage.

Always Mention your Post-Office, County and State when writing to this office. No matter where you may happen to be for the hour when actually writing—never mention anything but your permanent address. To do otherwise leads to confusion, unless you desire your address changed. In that case state the old as well as the new address.

Money in Potatoes, by Mr. Joseph Greiner. Price, 25 cents, postpaid. This is a complete instructor for the practical potato-grower, and explains the author's new system in 40 interesting lessons. It is for sale at this office.

Pure Phenol for Foul Brood.—Calvert's No. 1 phenol, mentioned in *Cheshire's* pamphlet on pages 16 and 17, can be procured at this office at 25 cents per ounce. Not being mailable, it must go by express.

Yucca Brushes, for removing bees from the combs, are a soft, vegetable fiber, and do not irritate the bees. We supply them at 5 cents each, or 50 cents a dozen; if sent by mail, add 1 cent each for postage.

We will Present a Pocket Dictionary for two subscribers with \$2.00. It is always useful to have a dictionary at hand to decide the spelling of words, and their meaning.

Simmins' Non-Swarming System, and the AMERICAN BEE JOURNAL for one year, for \$1.25. The subscription to the BEE JOURNAL may begin anew at any time.

We Supply Chapman Honey-Plant SEED at the following prices: One ounce, 40 cents; 4 ounces, \$1; $\frac{1}{2}$ pound, \$1.75; 1 pound, \$3. One pound of seed is sufficient for half an acre, if properly thinned out and re-set.

Send Us the Names of bee-keepers in your neighborhood who should take and read the AMERICAN BEE JOURNAL, and we will send them a sample copy. In this way we may obtain many regular subscribers, for thousands have never seen a copy, or even know of its existence. This is one way to help the cause along.

CLUBBING LIST.

We Club the American Bee Journal for a year, with any of the following papers or books, at the prices quoted in the **LAST** column. The regular price of both is given in the first column. One year's subscription for the American Bee Journal must be sent with each order for another paper or book:

	Price of both.	Club
The American Bee Journal.....	1 00...	
and Gleanings in Bee-Culture.....	2 00.....	1 75
Bee-Keepers' Guide.....	1 50.....	1 40
Bee-Keepers' Review.....	1 50.....	1 40
The Apiculturist.....	1 75.....	1 65
Bee-Keepers' Advance.....	1 50.....	1 40
Canadian Bee Journal.....	2 00.....	1 80
Canadian Honey Producer.....	1 40.....	1 30
The 8 above-named papers.....	5 65.....	5 00

and Langstroth Revised (Dadant).....	3 00.....	2 75
Cook's Manual (old edition).....	2 25.....	2 00
Bees and Honey (Newman).....	2 00.....	1 75
Binder for Am. Bee Journal.....	1 00.....	1 50
Dzierzon's Bee-Book (cloth).....	3 00.....	2 00
Root's A B C of Bee-Culture.....	2 25.....	2 10
Farmer's Account Book.....	4 00.....	2 20
Western World Guide.....	1 50.....	1 30
Heddon's book, "Success,".....	1 50.....	1 40
A Year Among the Bees.....	1 75.....	1 50
Convention Hand-Book.....	1 50.....	1 30
Weekly Inter-Ocean.....	2 00.....	1 75
How to Propagate Fruit.....	1 50.....	1 25
History of National Society.....	1 50.....	1 25

Do not send to us for sample copies of any other papers. Send for such to the publishers of the papers you want.

Hastings' Perfection Feeder.

This excellent Feeder will hold 2 quarts, and the letting down of the feed is regulated by a thumb-screw. The cap screws securely on. It is easy to regulate—either a spoonful or a quart—and that amount can be given in an hour or a day, as desired. By it the food can be given where it is most needed—just over the cluster. Not a drop need be lost, and no robber bees can get at it. A single one can be had for 40 cents, or a dozen for \$3.50, and it can be obtained at this office. Postage 10 cents extra.

International Bee-Convention.

—The Pamphlet Report of the Columbus, Ohio, Bee-Convention can be obtained at this office, by mail, postpaid, for 25 cents. This pamphlet contains the new bee-songs and words, as well as a portrait of the President. Bound up with the history of the International Society, and a full report of the Detroit, Indianapolis and Chicago conventions, for 50 cents, postpaid.

Clover Seeds.—We are selling *Alsike Clover Seed* at the following prices: \$8.00 per bushel; \$2.25 per peck; 25 cents per lb. *White Clover Seed*: \$10.00 per bushel; \$2.75 per peck; 30 cents per lb. *Mellot or Sweet Clover Seed*: \$6.00 per bushel; \$1.75 per peck; 20 cents per lb.—by express or freight.

A Modern Bee-Farm and its Economic Management, by S. Simmins, of Rottingdean, Brighton, England, is the title of a new book of about 200 pages, printed on excellent paper, and nicely bound in cloth. Price \$1.00. For sale at this office.

The Date on the wrapper label of your paper indicates the end of the month to which you have paid. If that is past, please send us a dollar to carry the date another year ahead.

Honey and Beeswax Market.**SAN FRANCISCO.**

HONEY.—White comb, 10@11½c.; dark, 6½@8c. White extracted, 9½c.; light amber, 5½@6c.; dark amber, 4½@5½c.
BEESWAX.—18@22c.
 Jan. 25. O. B. SMITH & CO., 423 Front St.

BOSTON.

HONEY.—We quote: Best white clover 1-pounds, 18@20c.; best 2-lbs., 16@18c. Market is very strong and stock of white comb honey is very light.
 Mar. 9. BLAKE & RIPLEY, 57 Chatham Street.

DETROIT.

HONEY.—Best white 1-lbs., 16@17c. Sales slow. Extracted, 9@10c.
BEESWAX.—22@23c.
 Feb. 11. M. H. HUNT, Bell Branch, Mich.

CHICAGO.

HONEY.—We quote: White clover 1-lbs., 16@17c.; 2-lbs., 14@15c. Good dark 1-lbs., 13@14c.; 2-lbs., 12@13c. Buckwheat 1-lbs., 15@14c.; 2-lbs., 11@11½c. Extracted, 6½@7½c., depending upon quality and style of package. Market dull and stock sells slowly.
BEESWAX.—22c.
 Jan. 24. S. T. FISH & CO., 189 S. Water St.

ST. LOUIS.

HONEY.—Choice white clover comb, 13@15c.; fair 11@12c.; dark, 8@10c. Extracted, dark, in barrels, 5@5½c.; choice, 5½@6c.; in cans, 6@7½c. Market is quiet but steady.
BEESWAX.—20c. for prime.
 Jan. 17. D. G. TUTT & CO., Commercial St.

CHICAGO.

HONEY.—Best 1-lbs., 17@18c. Extracted, 7@9c. for best quality, according to body, flavor and style of package. Trade is limited to local consumption. Off grades of comb honey are slow at lower figures than given above. But few will buy dark comb.
BEESWAX.—22c.
 Jan. 17. R. A. BURNETT, 161 South Water St.

MILWAUKEE.

HONEY.—We quote: Fancy white 1-lbs., 17@18c.; 2-lbs., 15@16c. Good dark 1-lbs., 15@16c.; 2-lbs., 14@15c.; fair 1-lbs., 12@14c. Extracted, white, in kegs and ½-barrels, 8½@9c.; amber in same, 7½@8c.; in pails and tin, white, 9½@10c.; in barrels and ½-barrels, dark, 5½@6c. Market dull. The very best sells slowly, and inferior qualities are neglected very much. Damaged, broken and leaky comb honey not wanted.
BEESWAX.—22@23c.
 Jan. 10. A. V. BISHOP, 142 W. Water St.

CINCINNATI.

HONEY.—We quote extracted at 5@8c. per lb. Best white comb honey, 12@16c. Demand is only moderate. No overstocking of the market.
BEESWAX.—Demand is good—20@22c. per lb. for good to choice yellow, on arrival.
 Feb. 21. C. F. MUTH & SON, Freeman & Central Av.

KANSAS CITY.

HONEY.—White 1-lbs., 16c.; fall, 14c.; California 1-lbs., 16c.; white 2-lbs., 14c.; extra 2-lbs., 13c. Extracted, white California, 8c.; amber, 7c. Market dull.
BEESWAX.—20@22c.
 Jan. 22. CLEMONS, CLOON & CO., cor 4th & Walnut

KANSAS CITY.

HONEY.—Choice 1-pounds, 15@16c.; dark 1-lbs., 12c.; 2-lbs., 14c.; dark, 11c. White extracted in 60-lb. cans, 8c.; amber, 7c.; in barrels and kegs, 5@8c. Demand good, prices steady, and stock large.
BEESWAX.—None in market.
 Jan. 4. HAMBLIN & BEARSS, 514 Walnut St.

DENVER.

HONEY.—White, in 1-lb. sections, 15@16c. Extracted, 9@10c.
BEESWAX.—20c.
 Jan. 1. J. M. CLARK & CO., 1409 Fifteenth St.

NEW YORK.

HONEY.—We quote: Fancy white 1-lbs., 14@15c.; 2-lbs., 12c. Fair white 1-lbs., 14@15c.; 2-lbs., 10 to 11c. Buckwheat 1-lbs., 10@11c.; 2-lbs., 9@10c. Extracted, white, 7½@8c.; dark buckwheat, 6@8½c. which is in good demand. Market dull, except for extracted buckwheat; for all other kinds it is quiet, owing to unseasonable weather, we believe.
 Jan. 10. HILDRETH BROS. & BEGELEKEN, 28 & 30 W. Broadway, near Duane St.

SAN FRANCISCO.

HONEY.—We quote: Extracted, white, 6½ cents; amber, 6c. Comb, white 1-lbs., 13@14c.; 2-lbs., 13c.; amber, 10@11c. Demand is of a jobbing nature, and arrivals are small.
BEESWAX.—19@20c.
 Jan. 8. SCHACHT, LEMCKE & STEINER, 16 & 18 Drumm St.

Your Full Address, plainly written, is very essential in order to avoid mistakes.

Advertisements.**ITALIAN BEES.**

A FULL COLONY with Tested Queen, in Langstroth hive, only \$5.00. Address, 11A1t ARTHUR MEYER, Pekin, Ills.
 Mention the American Bee Journal.

The Revised Langstroth, and Dadant's Foundation. See advertisement in another column.

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100 COLONIES Italian and Hybrid BEES, in Langstroth hives—Italian, \$3.00; Hybrid, \$2.50 per Colony.

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DEALERS IN

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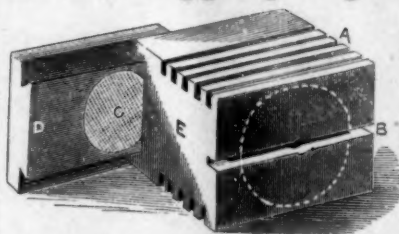
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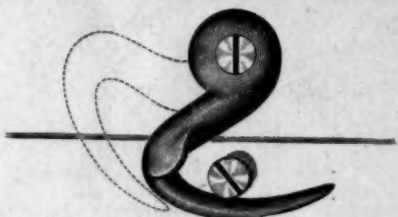
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FOR fastening loose Bottoms to Hives, and many other useful purposes. The neatest, best and cheapest thing out.

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WE can furnish Electrotypes of all the Engravings used in this JOURNAL or in our Catalogue, at 25 cents per square inch. If to be sent by mail, add 10 cts. for postage. No single Electrotypes sold for less than 25 cts. Measure from outside points shown, on both length and width of the printed impression.

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WHEN it once gets a start, it furnishes permanent bee-pasturage.

WHERE IT GROWS

there is never a season of total failure of the honey crop, and the honey is equal, if not superior, in flavor and appearance to white clover honey.

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The Hive and Honey-Bee, and Dadant's Foundation. See advertisement in another column.

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